programa final



Encontro Nacional de Produtores e Usuários de Informações Sociais, Econômicas e Territoriais

INFORMAÇÃO PARA UMA SOCIEDADE MAIS JUSTA

III Conferência Nacional de Geografia e Cartografia

IV Conferência Nacional de Estatística

Reunião de Instituições Produtoras

Fórum de Usuários

Seminário "Desafios para Repensar o Trabalho"

Simpósio de Inovações

Jornada de Cursos

Mostra de Tecnologias de Informação

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IBGE 60 anos 1936-1996

Uma das maneiras de olhar o ofício de produzir informações sociais, econômicas e territoriais é como arte de descrever o mundo. Estatísticas e mapas transportam os fenômenos da realidade para escalas apropriadas à perspectiva de nossa visão humana e nos permitem pensar e agir à distância, construindo avenidas de mão dupla que juntam o mundo e suas imagens. Maior o poder de síntese dessas representações, combinando, com precisão, elementos dispersos e heterogêneos do cotidiano, maior o nosso conhecimento e a nossa capacidade de compreender e transformar a realidade.

Visto como arte, o ofício de produzir essas informações reflete a cultura de um País e de sua época, como essa cultura vê o mundo e o torna visível, redefinindo o que vê e o que há para se ver.

No cenário de contínua inovação tecnológica e mudança de culturas da sociedade contemporânea, as novas tecnologias de informação - reunindo computadores, telecomunicações e redes de informação - aceleram aquele movimento de mobilização do mundo real. Aumenta a velocidade da acumulação de informação e são ampliados seus requisitos de atualização, formato - mais flexível, personalizado e interativo - e, principalmente, de acessibilidade. A plataforma digital vem se consolidando como o meio mais simples, barato e poderoso para tratar a informação, tornando possíveis novos produtos e serviços e conquistando novos usuários.

Acreditamos ser o ambiente de conversa e controvérsia e de troca entre as diferentes disciplinas, nas mesas redondas e sessões temáticas das Conferências Nacionais de Geografia, Cartografia e Estatística e do Simpósio de Inovações, aquele que melhor enseja o aprimoramento do consenso sobre os fenômenos a serem mensurados para retratar a sociedade, a economia e o território nacional e sobre as prioridades e formatos das informações necessárias para o fortalecimento da cidadania, a definição de políticas públicas e a gestão político - administrativa do País, e para criar uma sociedade mais justa.

Simon Schwartzman
Coordenador Geral do ENCONTRO

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Registramos ainda a colaboração de técnicos das diferentes áreas do IBGE, com seu trabalho, críticas e sugestões para a consolidação do projeto do ENCONTRO.

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"Economic Statistics At The End Of the Decade"

by
Jacob Ryten
Statistics Canada

I don't know about the end of the decade except that there is a problem with the computer systems of my institution. In fact this is the only problem about the year 2000 of which I am sure. When the year 2000 arrives many of the programmes on which we rely today will have to be changed at great trouble and expense because they depend on routines that limit themselves to comparing the two last digits of the year and assume stupidly that each year is denoted by a number bigger than the number denoting its predecessor.

In the world outside our offices, changes will not be as sharp. The economic and social world will be continuing its relentless pace of change. But as it has happened in the past, we shall be labouring under the stress created by the inadequacy of intellectual schemes which were helpful in the past but are of increasingly scant value in the face of current developments. If anything we may be suffering from a widening gap caused by accelerated change in the real world and slow adaptation at constant speed on the part of the way in which we statisticians do and think about things.

Talking about the year 2000 is but a symbol of our collective frustration at the inadequate way in which we deal with those events that are bothering us today and which we think are expressions of a persistent trend. It is also a slogan in the campaign that we are bound to wage in our cry to mobilize resources and seek attention to the problems with which we shall confront our users in a few years time. Fortunately, if we abstract from our pre-budgetary postures and look at the future coldly, what is about to hit us in the year 2000 cannot be all that different from what we have been perceiving with gradual clarity in the last few years. We know from observation that those trends that are getting sharper are also the most likely to hit us hardest.

I have selected a few of the perceived changes in economic organization, the measurement of which poses questions for which we in Canada have no ready answers. I believe those changes should concern you as much as they concern us because if you do not experience them today with the same force as we do, it will not take long before we are on a par. This will be particularly the case as you integrate with other countries and your patterns of industrial organization reflect as they are bound to the process of integration. In fact, I am convinced that the hallmark of the decade ushered in by the year

2000 is that no country or group of countries will be able to insulate itself from what is happening elsewhere.

In order to discuss the changes that I expect will trouble us - official statisticians - most, I have organized my paper into five distinct sections:

Should laws stop at borders?
Are establishments dead?
Wage earners or hired guns?
Are bytes more important than dollars?
Are we more productive than we look?

At the end of each question I ask - not entirely rhetorically - whether you in Brazil or you in Mercosur as the case may be, have recognized in your systems of measurement, legal arrangements, or conceptual frameworks the relevance of the questions with which I have titled my five sections. The questions are intended to give rise to discussion particularly where you feel that the problem is as interesting to you as it is to us in Canada.

Should laws stop at borders?

We have a law; it extends to our geo-political border; but modern politics and modern industrial organization have made nonsense of the notion of border. Let me give you a few examples. We have a highly integrated economy with the United States. In another decade, the weight of NAFTA will lead us to additional integration with Mexico. What does integration mean? That our industries operate on both sides of the border under the same ownership and control; that our trade unions bargain collectively with their management on behalf of membership on both sides of the border; and that the benefits of research and development on either side of the border accrue to both sides for those industries under the same ownership and control.

In order to govern wisely, our authorities require to know the state of our production and the resources that go into it as much as the benefits that accrue from production to labour, management and to stockholders. But manifestly, a complete picture of the state of affairs can only be gathered if the information does not stop at the 49th parallel but rather at the point where enterprises operating on both sides of the border have their boundaries. This is as true for us as for our neighbours to the South and as it will be for Mexico when the extent of integration reaches the same extent as it has reached between Canada and the United States. At one time we thought we were unique in this requirement. But in the framework of the European Union, individual countries experience the same need for information and will continue to do so, as long as their governments are ultimately responsible for administering fiscal and monetary policies and claim some autonomy. Thus France and Germany and Spain to name but three of the Union members have either

experienced or will experience the need to know more about their resident enterprises that operate abroad and conversely something about their non-resident enterprises that operate in their own countries. The statistical offices of all three countries are very much aware that such modern industries as tele-communications and informatics are central to the operation of all transnational enterprises and that the activities of those industries do not stop at any geo-political border.

Consider a related example. Take a group of countries in an economic *bloc*. NAFTA is not yet an economic *bloc* but the European Union is one. Such countries will create or have created political institutions which in turn will have a say on how advantages and responsibilities will be shared within the *bloc*. Normally, there will be a sharing formula and in order to ensure that its objectivity is maintained it will be driven by official statistics. Hence the need for statistical comparability and also for additivity - so that each country can derive a stated proportion of the advantages and discharge in an equally stated proportion the responsibilities. But additivity of GDP, for example, is only possible if we do not duplicate or miss any of its components. However, in this modern era of important enterprise headquarters which provide a considerable range of services to their branches beyond national boundaries, it is not possible to either add or distribute without duplication unless care is taken to identify the sources of duplication. This is only possible if there is a supra-national authority to whom access to individual information on businesses is granted - typically in contravention of what is unambiguously stated in any country's law about statistical confidentiality.

But if this issue is only recognized within the European Union, it will not take long before it becomes a problem in NAFTA and in Mercosur if the two economic areas prosper.

Have you in the context of Mercosur thought of these matters? Do your partners' laws allow you to collect business activity information from non-residents? Do your laws allow you to reciprocate information to non-residents? What powers do you have if "interesting" non-residents deny providing you with relevant information? These are the conundrums that we shall experience increasingly and ones that our body politic is only dimly aware of.

Are establishments dead?

Not so long ago I was asked to contribute to a Symposium on business statistics a paper on the outlook for establishment statistics in ten years time.[1] I thought about the subject and decided that on the basis of my experience with establishment statistics over the last

[1] Business Surveys in Ten Years Time: Establishments Surveys, John Wiley, 1993

twenty years there was no long term future for what had been a constant in Canadian (and American) business statistics - the establishment as a statistical unit. Today, if anything my view has hardened.

My reasoning was as follows: establishments were conceived of when economies such as the Canadian operated mines and steel mills, lumber yards and fish canneries. These activities were located in fixed sites, employed specialized (and unionized) personnel; produced well defined products with equally well defined machinery. They were helped by a slew of services chief among them transportation, distribution and to a certain extent communications but the latter did not enjoy an independent existence. Accordingly, if things went badly for steel and wood, all the services which supported those two industries suffered as much as the principal activity. And beyond the supporting services, there was not much else.

It is that image of the economy which we have perpetuated with our industrial classifications and our statistical units. But is it widely applicable to conditions in Canada today? Almost certainly not. While it is true that we still have manufacturing and resource based industries similar to those which we operated at the turn of the century, those industries have come down substantially as a share of GDP and today do not account for even as much as one fifth of the total. Moreover, their importance as employment creators and particularly as employment creators for the young is greatly diminished. Even in conjunction with mining, water and electricity and construction all of which are of great importance to the Canadian economy, the sector does not account for much more than a third of GDP.

Our services - telecommunications, finance, general services to enterprises- have come to play an increasingly higher profile role but the form in which those services are organized is very different from what characterized industry earlier in the century. For one they are gypsy like. Their location is neither long term permanent nor can it be easily interpreted as physical factors play a marginal role and only a specialized fraction of the labour force (which in any case is very mobile) is of interest. The firms in question have headquarters at fixed addresses as well as places where equipment is repaired and so on. But the relationship between those headquarters and maintenance centres as well as the activities in which they are engaged bear a flimsy relationship to our traditional definition of establishment.

Actually, profound changes have been affecting manufacturing both since the signing of NAFTA and even more so since the onset of the last economic recession in the early nineties. A number of companies have decided that they should operate their industrial activities offshore and have located them either immediately South of the Rio Grande or else to the more dynamic Far Eastern countries to which so much of Western industry has been increasingly moved.

There is no reason to suppose that this trend is about to reverse itself. In the meantime, we have to decide how and with the help of which statistical indicators, we are going to understand what our enterprises do. Employment data suggests unambiguously that many of those enterprises no longer do manufacturing. We presume that they do planning, designing, managing, financing and selling and providing all the support required for entities that operate (manufacture) abroad but we cannot assemble a complete picture of the enterprise if we do no more than detecting resident establishments.

It follows that we should think about other methods to carve up our respective universes of business and pay more attention to the need to have a full measure of each business that operates independently. This is the same as saying that we believe that the time is ripe for a movement away from the establishment and towards enterprise statistics for only then will we realize where the distinct bits of the enterprise are located and how they relate to each other.

When was the last time that you in Brazil asked yourselves whether the information that you collect from establishments or local units is the most appropriate in view of the way your industry is organized? And have you ever thought of designing a survey that would answer the question whether you should stick to your traditional units or you should move to another? What are your thoughts on the effects of a fully fledged Mercosur on your industrial organization? And have you discussed this matter with your partners?

Wage earners and hired guns

My daughter is an architect. She works in an architect's office. It is a big office - it employs about one hundred professionals including architects and engineers, town planners, lawyers and so on. They are mostly young and recently out of graduate school. They have one feature in common - none of them is an employee. That is right - they are all self-employed. At least this is what they report on their tax form and this is what their employer reports on his. His is but an office with two or perhaps three employees - a secretary, a receptionist and an accountant. All other labour is acquired in the form of purchased services. The employees are consultants who sell advice to the firm.

I am not sure what is built in to the contracts of these young people. I presume they are sufficiently hard-nosed to insist on a provision for holidays, sick leave, regular revisions to their contracts and general insurance to cover illness and disability. But of course theyare not insured against unemployment and if they want to build up private pension rights they have to do it out of their - not salary - but self-employed income.

I mentioned my daughter's firm to give some immediacy to what appears to be a growing trend in the modern world in many a firm engaged in the provision of technical services.

The market in which such firms operate is profoundly affected by cyclical turns as well as by merciless technological innovation. The last things employers wish to have on their hands is a staff of high earning but unoccupied professionals who could only be dismissed after some compensation.

But our traditional statistics do not lend themselves easily to an interpretation of what happens in my daughter's firm. If we look at it from the point of view of establishment or enterprise statistics, we would find no more than a firm employing three people earning a disproportionately large gross business income. Suppose the firm worked at two different places - one housing management and the other housing all the professionals contracted by the firm. And suppose we identified the latter as the productive establishment and the former as an ancillary unit. The establishment would truthfully report zero employees - unless it had an employed security guard - but list as its outputs, plans and technical reports. Only the ancillary unit could report value added as it would know the difference between its gross income and the value of its purchased services. However, it would report a tiny value added compared to its gross revenue and of course there would be no way through industry statistics to modify the ratio by taking into account the value added of all the individual architects and other professionals. And to which industry would we add them?

There is no reason why in the framework of our household survey we could get the kind of information that would help us describe what happens in the architect's firm for which my daughter works - its occupational distribution or a full measure of its value added. Granted that at a very aggregated value we would get everything right - which in itself is questionable - we would still be left with imperfect measures on who works in architecture and how much they produce. Nor would our conventional measures of employment and unemployment deal adequately with free-lance people who may work one week and not the next out of choice rather than necessity.

If you are in the same position as we in Canada have been for the last twenty or more years you will have noticed the gap between establishment employment and household statistics. Of course you will know about multiple job holders but not necessarily about people who have disappeared from the payroll of firms but are technically speaking full time employees. There are increasingly more imaginative arrangements to manage the labour market. There are the firms that have no output but only have employees. They are the ones that " rent out" their employees to other firms in the same group. There arethe cottage industry arrangements - of which systems development is a good example, in which intellectual work is farmed out to people who stay at home - or abroad - and are satisfactorily but only remotely connected to their employer or customer to provide a service on a regular basis.

But much is missing from our measurement system before we are entitled to feel that we can safely brief our governments about what is happening to our labour markets and whether we have been alarming them unduly or not enough. I would mention three

frameworks that either need to be changed or else need to be created. The first one is a proper classification of the status of labour inputs. There are members of the labour force who are neither employees nor consultants although they look like consultants on paper (tax forms) and like employees in practice. Unfortunately, our classification schemes do not yet do them justice. The Voorburg Group on Services Statistics has volunteered to conduct an initial inquiry into the matter of the evolving status of employment and occupations and to have reports discussed by the Autumn of 1996. But I am not sure that by itself it can muster the necessary resources to reflect all that is new in labour market organization.

Secondly, we need some form of tracking of people as they join the labour market and decide to opt for one status or another. We know something about their opting out of the Labour Force and we know what brings them back. We also know that once in the Labour Force they are either at work, have part time work or at work full time. But that is a very simple state of affairs, which neither deals with the chronic ailment of under-employment which is so much more difficult to define and to measure nor with the modern forms of attachment between workers and the firms for which they work.

Anyhow, we are far from a situation in which we can explain why people like my daughter have gone for the status of hired gun while other professionals have preferred waiting but insisted on acquiring the status of employees. We in Canada are in the midst of carrying out the first round of a very ambitious longitudinal survey of labour market conditions. I believe that our model or improved version thereof will be adopted by many more countries before the decade is over for reasons similar to the ones given above.

Lastly, we need far better detection methods than we have right now. Not long ago, I was approached by someone for our Ministry of Human Resources with the following inquiry: was it the case that small businesses in Canada had ceased to be the creators of employment in cyclical upswings because in so many cases staff were moving towards the status of hired consultants? It is not an easy question to answer and the way we attempted to deal with it was through our register of business. We listed all those small firms which in the course of a period of three or four years (1990 to 1994) had lost employment. We divided them into those for which the nominal (there was not much inflation to be concerned with) Gross Business Income (GBI) actually went up and those for which it went down. Next we took those which had an increasing GBI and listed all their employees by tax number in the first year of the exercise. We matched them against their income tax statements in subsequent years and found how many had changed their main source of income from wages and salaries to income from self-employed. And indeed, what our Ministry suspected was the case.

I mention in detail this last exercise because I believe that labour market issues are going to be dominant over the next decade pretty much everywhere. I also believe that proper answers can only be given by extensive (but not exclusive) use of tax and other

administrative registers in addition to better classifications of employment status and some form of longitudinal studies of labour market conditions.

Can you track your labour flows in the way I described above? In view of the way modern technology and economic organization are affecting the labour market, do you think you should develop the capacity to describe labour market flows longitudinally? Have you considered that you must gain access to administrative registers of all kinds to be able to study labour dynamics (short of an extremely expensive household survey) and that this is something from which at present you do not benefit? Are your legal systems an impediment to access?

Are bytes more important than dollars?

Not so long ago a new Canadian government took over and announced its social and economic agenda. The latter included a great deal about the need to expand Canadian markets abroad by an increase in the competitive edge of Canadian exporting industry and by marshalling science and technology in order to acquire that competitive edge. The party in power made great play of the fact that large markets mean faster growth and larger markets imply industrial innovation which in turn implies acquiring faster and more intelligently the benefits of scientific discovery and technological application.

When it became necessary to translate these propositions into concrete policies the Government realized that there was very little information to suggest that any of this was true. Moreover, if it was true it was not at all obvious what should be done in order to, for example, tighten the links between those who are at the forefront of scientific discovery and entrepreneurs in charge of exporting enterprises; or how one should better align one's support for science and technology by spending on one type of research rather than another; or whether it is preferable to support pure science rather than technological development or the other way round.

The fact of the matter is that all that Statistics Canada knew was how much government and industry spent on something we defined and they called research and developmentbut there was no knowledge - not even conjectural - of what were the outcomes of that expenditure. We knew that the Government, to start at the obvious end, spent six or so billion dollars on a number of scientific pursuits and we had for each a very detailed description of what it was. But no one in government could say whether similar results could be attained by a ten per cent reduction or increase in expenses; or whether the structure of the expenditure was "optimal" in some crude sense.

The reason why we knew this is was because the Federal Government - of all three governmental levels in Canada - is the chief spender on science. As is the case with any other kind of federal expenditure, disbursements are distributed by province and provincial governments are extremely keen to ensure, in the face of their electorates, that

they have received at least their due, every time a federal expenditure is to be shared among provinces.

Accordingly, all that science and technology statistics had been used for was to inform provincial electorates that thanks to the energies deployed by their respective governments, not a penny that should accrue to province A had been foolishly spent by being granted to province B. Of course, if this is the chief purpose for which S&T statistics are compiled, it is not welcome to introduce another inquiry into the purpose and effectiveness of the expenditures on R&D.

As I write these lines, we have been given a credit to improve the quality of our information on S&T and one of the first things we shall try and do is to see whether tracking information flows is at all possible. By this I mean that somewhere in the chain of events that leads from having a good idea to converting it into a commercial success, there must be a series of steps by which the original bytes of information get channelled to those (receptors) who change it, adapt it and put it at the service of others who in turn convert it into something that is commercially usable.

Now if that chain of events involves purchases and sales (for example, purchases of patents or costs of reverse engineering) the chances are that we can track it. But if no change of financial assets is involved we are not equipped to track the way in which bytes of information flow.

Surprisingly, at first there was no great claim for new information of the type I just described. Indeed, it was thought that the entire initiative could proceed with a minimum of information to steer it down the right path. It was only at a later stage that officials realized that if the government was to continue playing a role in the stimulation of scientific research - and in the case of Canada just as in Brazil government is involved in big scientific initiatives - it had to become concerned with the availability of information different from the kind of information it had been used to.

> *The drive towards competitiveness and the requirement to measure the role that R&D plays in stimulating it are going to be with us for the next while. However, only part of that role can be explained in terms of money flows. Some (most?) of it is much more meaningful if accounted for in terms of "bytes". But none of us knows how to detect, measure and compile such flows. Have you given any thought to the matter? Do you find it an interesting problem? Do you think that the demand that Canada experiences today and will continue to experience for the foreseeable future is likely to hit Brazil if it has not done so already? And if it did (or when it does) what are you going to answer?*

Are we more productive than we look?

I hope so as citizen but I have mixed feelings as a statistician. Anyway, the problem is very deep irrespective of our hopes for a particular outcomes. As products (goods and services) become increasingly more complex and technology plays an increasingly important part in their design, the issue of whether today's variant of a given product is qualitatively comparable to the variant that was available ten years ago has a very special relevance. Moreover, at no time in the past was an equivalent concern expressed largely because it took longer to embody new technologies in consumer goods and services and so modify their quality characteristics.

There are two propositions that are commonly expressed with varying degrees of intensity:

- the quality of goods and services (including the variety offered for choice) is increasing at a steadily faster rate;
- statisticians measure imperfectly - or do not measure at all - the variations in the quality of the goods and services they price.

From these propositions it follows that we also mis-measure our real output because so much of it is estimated on the basis of deflated values and the deflators stand indicted of being upwardly biased. Clearly, some important policy prescriptions follow from these propositions. For example, targeting the CPI annual per cent change at plus two per cent maximum may in fact mean that the target is deflationary if the upward bias is of the order of two per cent or more. If it is felt that the economy overheats if it grows at more than four per cent annually, we should target GDP growth not to exceed say two per cent annually because of the implied downward bias involved in its estimation.

I am not suggesting that the Canadian bias - or for that matter anyone else's - is of this order of magnitude but rather that if these are the consequences of our findings it follows that we shall need a significant overhaul in the manner in which we compile our price indexes and in the manner in which we estimate and introduce our quality adjustments. It may seem esoteric for offices which are struggling with the complexities of the new UN system of national accounts to be warned that a few years down the line, the growth rates which they have so laboriously estimated will be questioned and put up for substantial revision. My point is that they will not escape the questioning particularly if in their country there is a sophisticated industry open to outside influences and recording ever faster rates of adaptation to new ways of doing things. Such, of course, is the case of Brazil which both for its gigantic internal market and for its export performance cannot keep away from the latest in chemicals, electronics and machinery and equipment.

In the case of the United States, the matter of persistent under-estimation of real growth has been broached in the press and taken up by legislators in Congress. The CPI has been sharply questioned and statistical agencies have led the way to table the issue in international venues largely to warn their peers that questioning of seemingly rock solid

numbers had started. We in Canada, do not expect that we shall be immune from questioning and we have started to prepare ourselves for an intensive review of many of our basic numbers so that we can at least satisfy the inquiring public that we are aware of the problem and propose to do what is warranted if possible in concert with our chief partners.

How about you? Have echoes of these questions been heard? Are you asked to review the matter of quality in the framework of your CPI? Are you concerned that you may not be measuring gains in output as well as you should? Do you think that other biases - there all kinds of bias in all countries' estimates - are of a nature such that they might offset this one? Have you considered whether you should go it alone or do as we do - put together a group of like-minded colleagues and propose that we labour share because the task is too costly for our size and budget?

Conclusions

I do not know any more than you do what things will be like at the end of the decade. But I am concerned that if we make no preparations whatsoever to meet what we think is likely to happen, we shall look foolish and be accused of lack of professional responsibility. For this reason, wherever we can we take anticipatory measures to at least lay the groundwork for initiatives we believe we shall be asked to take. Accordingly, we are preparing to have better Science and Technology statistics, we have started to align colleagues to embark on a joint price- quality adjustment programme, we have resorted to a number of ambitious inquiries about the way in which the labour market works and what are the modes of labour remuneration, we have a study underway on forms of industrial organization and we hope that by next year or at the latest, the year after we shall be in a position to define a five to ten year programme for the overhauling of our economic statistics. I believe that in doing so we are acting prudently. These are the reasons that led me to engage you in a discussion of why we should be reasoning along similar lines.